A total of 32,450 acres was inspected by the Department of Agriculture and the Idaho Crop Improvement Association. Halo blight symptoms were identified and reported on bean plants in 389 fields involving 5,655 acres. Approximately one-half of these fields were discovered during the growing season and the balance were found through observations of the dry pods in the windrow. There were 58 varieties involved, 51 were snap bean varieties, and 7 were dry edible varieties.

As a result of field inspections, 2,838 acres were destroyed by plowing in 1965. When infested plants were discovered in the windrow, the dried plants in those areas, as in 1963 and 1964, were burned prior to threshing.

The cost of control measures for halo blight have been considerable. Aside from the expense of both public and private research, a number of seed companies have sustained severe financial losses due to lost sales, lost seed, costs of inspections, disinfectants, and seed treatment. For 1965 alone, an estimated loss of about $400,000 was largely paid for by Idaho growers through the South Central Idaho Bacterial Blight Control Association Inc., a grower cooperative, and the U. S. Department of Agriculture, Federal Crop Insurance.

Cooperative efforts by all segments of Idaho's bean seed industry, with an effective quarantine on bacterial diseases of beans, will probably materially reduce the incidence of halo blight in the seed production areas and elsewhere.

Habit of Growth in Relation to Yield and Other Quantitative Characters of Beans

Luis H. Camacho, S. H. Orozco, and C. Cardona

There are 3 types of bean varieties (Phaseolus vulgaris L.) that can be differentiated by the habit of growth: bush types, short viny types, and pole types. In order to get information on the relationship of habit of growth and other plant characters including yield, 4 crosses were made between bush and pole varieties.

Beginning with the F_2 the pedigree method of selection was practiced to isolate lines with the above three types of growth. F_5 selections of each of the three types were tested using a split plot design with 4 replications where the types of growth were randomly alloted to the whole plots and the selections within each type randomly alloted to the split plots. Plot values were taken as the average of 10 equally competitive plants for the characters, yield per plant, pods per plant, seeds per pod and seed size. Statistical analysis were made to test mean differences for each character among the three types of growth and mean differences of characters within each type of growth.

Comparisons among types of growth showed that in 3 of the 4 crosses, yield per plant was significantly higher in viny types than in bush types. This superior yield however, had a different origin in each cross; in the cross Japon 6 x Valle 19 the increased yield was produced through more pods per plant; in the cross Japon 6 x Venezuela 77 through more seeds per pod; in each of these 2 crosses the total number of beans was larger in viny selections. The other cross with higher yield for the viny selections was Pajarito Chileno x Japon 6 but the increased yield was due to the large seed size of these selections. Pods per plant was similar in bush and viny types and seeds per pod was significantly greater in the bush selections of this cross.

In the cross Valle 17 x Valle 19 there was no significant yield differences among the three types of selections for plant habit. Seeds per pod and seed size did not show significant differences either, but number of pod per plant was significantly greater in viny selections: since the main objective of a selection program for yield is the isolation of high yielding lines, a cross with segregating progenies like these would offer little opportunity to improve yield if the criterion of selection was based only in the number of pods per plant.

The analysis of lines within each selection group indicated that selection for plant habit may include several genotypes of other characters. Although in a few cases the lines within each habit were homogeneous, in the majority of the populations studied statistical tests showed that for a given character there were between 2 and 4 genotypes in each of the three groups selected for growth habit.

For this experience it appears that selection for one character alone like habit of growth or individual yield components may not lead to the development of high yielding lines. The use of an index in which all characters are combined will probably be more effective.

New Bean Association

Luis H. Camacho

During the Sixth Latinamerican Meeting of Plant Production held in Lima in November 1964, bean investigators founded a new association. The foundation act was signed by 18 participants in the discussions of bean research problems. By the end of 1965 the association had 42 active members. This year the association will publish its first annual report with papers on diverse topics related to bean production including fertilizing, breeding, genetics, and disease resistance.

The purpose of the association is to excharge information and seed stocks. The chairman of this association is Dr. Canuto Cardona of Colombia.